CO2 Levels Are Piling Up 'Like Trash In a Landfill'

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Body

Levels of planet-warming carbon dioxide reached another record in May, the month when they normally peak.

Levels of carbon dioxide in the atmosphere reached their annual peak last month, and once again were the highest in human history.

Despite the economic collapse resulting from the coronavirus pandemic, which has led to sharp declines in carbon dioxide emissions, the amount of the greenhouse gas has continued to climb. The May monthly average was 417.2 parts per million, according to scientists at Scripps Institution of Oceanography at the University of California, San Diego.

Separately, researchers with the National Oceanic and Atmospheric Administration reported a slightly lower May average of 417.1 parts per million.

The readings are about one-half of 1 percent higher than the previous high, in May 2019. The year-to-year increase of about 2.5 parts per million is in line with the average annual increase during the past decade. Half a century ago, the average annual increase was just 0.8 parts per million.

Emissions have fallen sharply this year as first China and then many other countries shuttered factories and other businesses, and locked down cities amid the pandemic. One recent estimate suggested that, over all for 2020, emissions from human activity could drop nearly 8 percent, which would be the largest year-to-year decline ever recorded.

But even a drop of that magnitude is overshadowed by natural variability in carbon emissions from vegetation and soil in response to seasonal changes in temperature and soil moisture, Scripps scientists said in a news release announcing the readings. They estimated that human-caused emissions would have to drop by 20 percent to 30 percent for at least six months to result in a slowing of the rate of increase of carbon dioxide in the atmosphere.

"People may be surprised to hear that the response to the coronavirus outbreak hasn't done more to influence CO2 levels," said Ralph Keeling, a geochemist who runs the Scripps Oceanography CO2 program. The project, begun by his father, Charles D. Keeling, has been taking readings since 1958 at a NOAA observatory on Mauna Loa volcano in Hawaii.

"But the buildup of CO2 is a bit like trash in a landfill," he said. "As we keep emitting, it keeps piling up. The crisis has slowed emissions, but not enough to show up perceptibly at Mauna Loa."

"What will matter much more is the trajectory we take coming out of this situation," Dr. Keeling added.

The amount of carbon dioxide in the atmosphere currently varies by about 10 parts per million during the year. It reaches a peak each May, before the widespread growth of vegetation in the Northern Hemisphere, which has about two-thirds of the Earth's land mass, removes some of the gas through photosynthesis.

The May average first topped 400 parts per million in 2014. The latest full-year average, for 2018, was 407.4 parts per million, about 45 percent higher than the preindustrial average of 280.

The world has not experienced such carbon dioxide levels in several million years, the Scripps scientists said. By analyzing ice cores and ocean sediments, researchers have determined that temperatures millions of years ago were 2 to 3 degrees Celsius (about 3.5 to 4.5 degrees Fahrenheit) higher than in the modern preindustrial era and that sea levels were at least 50 feet higher.

https://www.nytimes.com/2020/06/04/climate/carbon-dioxide-record-climate-change.html

Graphic

PHOTO: The Mauna Loa Observatory in Hawaii, where CO2 readings are taken. (PHOTOGRAPH BY CHRIS STEWART/ASSOCIATED PRESS)

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